

Claims

- [c1] 1. A spindle motor comprising:
a shaft;
a round cone portion being a part of said shaft, and whose diameter changes evenly along said shaft longitudinally;
a conical cavity whose opening changes in diameter evenly along said shaft longitudinally, to correspond in contour to said cone portion, for accommodating said cone portion, said conical cavity having an inner peripheral surface opposing a lateral surface of said cone portion across an approximately uniform gap;
a member including said conical cavity;
oil filling a clearance, including the approximately uniform gap, between said cone portion and said conical cavity, wherein said oil is retained continuously without interruption; and
one and only one dynamic-pressure bearing formed in said gap, between the lateral surface of said cone portion and the inner peripheral surface of said conical cavity opposing the lateral surface.
- [c2] 2. The spindle motor set forth in claim 1, further including a magnetic biasing means acting in a direction counter to thrust-directed bearing force generated by action of said dynamic-pressure bearing, and cooperating with said dynamic-pressure bearing to support said shaft and said member rotating one relative to the other.
- [c3] 3. The spindle motor set forth in claim 2, wherein:
said conical cavity at its mouth is closed over by a disk-shaped cover having an aperture through which said shaft is inserted; and
a gas-liquid interface on said oil is positioned in between an upper face of said cone portion and an undersurface of said disk-shaped cover.
- [c4] 4. The spindle motor set forth in claim 1, wherein a recess for capturing foreign matter mixed into said oil is formed in the approximate mid-area of the bottom portion of said conical cavity.
- [c5] 5. A spindle motor comprising:

a shaft;
a round cone portion being a part of said shaft, and whose diameter changes evenly along said shaft longitudinally;
a conical cavity whose opening changes in diameter evenly along said shaft longitudinally, to correspond in contour to said cone portion, for accommodating said cone portion, said conical cavity having a base;
a member including said conical cavity;
a clearance between said cone portion and said conical cavity;
oil filling said clearance continuously; and
one and only one dynamic-pressure bearing formed in said gap, between a lateral surface of said cone portion and an inner peripheral surface of said conical cavity opposing the lateral surface; wherein
said cone portion diametrically expands heading toward the base of said conical cavity.